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ABSTRACT

The KIK (Kentucky Individualized Kindergartens) project, a collaborative project between Kentucky's Department of Education and the Chapel Hill (NC) Training-Outreach project, is designed to serve high risk children. KIK provides early identification of high risk kindergarteners, development of individualized education programs, and implementation of involvement of families. KIK has grown from its beginnings in 1978 to the curent 24 sites maintained in geographically depressed areas of the state. Staff development activities include summer institutes, on-site visits, workshops, and conferences. Program evaluation data illustrating impact through subsequent placement in regular classes for the majority of project participants are appended. (CL)

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Kentucky's Individualized Kindergartens

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B. Bright
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KENTUCKY'S INDIVIDUALIZED KINDERGARTENS
A STATE NETWORK DESIGN FOR EARLY INTERVENTION

The KIK program, now in its 5th year, has developed a network design for early intervention in Kentucky. This innovative program has been developed by collaboration between the Kentucky Department of Education, Bureau of Education for Exceptional Childre and the Chapel Hill Training-Outreach Project of Chapel Hill, North Carolina. It was developed in recognition of Kentucky's need for a state-wide system that would assure early identification and individualized programing for children who demonstrate high risk characteristics or are in need of special education and/or related services.

In spring of 1978, the collaboration was begun when Kentucky committed $94,000 of its incentive monies to replicate the Chapel Hill model through training, materials and methods in: (1) the identification of "high-risk" kindergarten children; (2) development of I.E.P's; (3) implementation of prescription programs; and (4) the effective involvement of families.

A corps of "Individualization Specialists" composed of kindergarten teachers, other LEA personnel and Field Service Consultants was trained in June 1978. A state-wide assessment of 5,000 kindergarten children through the use of the Learning Accomplishment Profile-Diagnostic Edition succeeded in generating state norms in four areas of development for Kentucky five year olds. Additionally, critical items were identified that were compiled into a LAP-D screening device. The LAP-D Screen could be quickly administered to all kindergarten children.

A new focus for the KIK program has emerged since 1979 when Kentucky first utilized its incentive monies to fund model demonstration programs. Small grants ($10,000) have been awarded competitively to six new local school districts per year for reproduction of the Chapel Hill Model of service. The geographically dispersed sites were encouraged to utilize innovative ways for providing assessment and individualized programing. A variety of staffing patterns or program delivery models have been used.

Currently, twenty four KIK sites are maintained in geographically dispersed areas of the state. Local programs have varied in use of volunteers, parents and staff.

Service delivery models through alternatives of mainstreaming, resource arrangements, itinerant staff, and self contained classrooms also differed from site to site. The replication of Chapel Hill model, however, resulted in the identification of high risk and handicapped children, the individualized programing for them through use of assessment procedures, and use of expanded curriculum and a variety of strategies for involvement of families.

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The Chapel Hill Training-Outreach Project staff has provided a four-day annual summer institute for key personnel from the six new sites selected each year. In addition, each of four Chapel Hill consultants have given three-day, on-site visits to new demonstration programs each year. Four workshops were conducted at each new site for other community agency personnel as a means of promoting interagency collaboration and establishing a network of support services for the demonstration programs.

The network design has been enhanced by a fall "trouble shooting" conference of all KIK personnel and also a spring conference for sharing ideas in a "show and tell" format

The field service consultants from the Division of Field Services have been an invaluabl link to the local school districts. Their role has included stimulation and assistance in developing KIK proposals, and provision of on-site training and consultation and training for local programs.

The collaborative effort of regular education and special education personnel at both the state and local level has been another unique and significant aspect of the KIK program. The openess to innovation and the absence of territoriality has promoted a team effort of volunteers, parents and staff at the local sites.

In short, the KIK program has given the 181 local school districts of Kentucky a system for state-wide identification and programing for high risk and handicapped children. To date, 150 of the 181 school districts have elected to participate in the KIK project. As a result of this program, approximately 20,000 kindergarten children have been assessed using the LAP-D.

The KIK network of 24 model sites and its large corps of 500 "Individualization Specialists" have provided Kentucky's LEA's with models, materials and methods for optimal services at minimal cost to the range of Kentucky's public school kindergarten population.

Appendix

The following excerpts on the Chapel Hill Model and the evaluation of the KIK Project are drawn from the Joint Dissemination Review Panel Submittal.

BRIEF DESCRIPTION OF THE PROGRAM:

The Chapel Hill Model is a diagnostic and prescriptive program serving pre-school and kindergarten aged children with a mild or moderate degree of handicap. It incorporates guidelines for assessment, planning, service delivery to children and their families, as well as on-going re-evaluation of child performance. This non-categorical model, developed in affiliation with the public school system of Chapel Hill, North Carolina, has been implemented in a variety of national and international settings. This validation sample is from kindergartens in eight public school districts of Kentucky which have population characteristics typical of the state; primarily rural, caucasian, English speaking, and of mixed socio-economic status. The Kentucky children in the model program at the time of initial testing averaged 66 months in age; 68% were male and 32% female; 80% were white, 5% black, and 15% did not report race.

Children needing individualized attention were identified either by diagnosis by professionals or a multi-step process consisting of assessment using a short screen version of the LAP-Diagnostic Edition (LAP-D), further testing of at-risk children on the complete LAP-D, full scale multi-disciplinary evaluation and review, and consultation with parents. The children exhibited a range of handicapping conditions with mental retardation occurring most often.

Because the project provides both a teaching model to use to address a child's needs and the materials to implement the program, it allows for flexibility in delivery of educational services to the handicapped child in a mainstream or self-contained classroom settings with early childhood or special education teachers. Most of the data reported here are from sites using the Chapel Hill program in a mainstream kindergarten classroom serving mildly or moderately impaired children together with their non-handicapped peers. Classes met daily in split sessions of three hours each or on alternate days for six hours.

EVIDENCE OF EFFECTIVENESS:

Design -

Two designs for data analysis are presented. The first, a quasi-experimental non-equivalent group design (Campbell and Stanley, 1966) contrasts performance of two similar groups before and after participating in an educational intervention.

The second compares standardized scores before and after intervention with that of the members of norm groups of comparable ages. Using this paradigm, zero gain from pre- to post-test performance is expected if the program has no effect.

Data Collection Procedures -

Pre/post measurement of performance on the McCarthy Scales of Children's Abilities were made on children in the program between October 1980 and May 1981. For those kindergarteners in the comparison group data were collected November 1979 and May 1980.[1]

[1]Unbiased comparison data could not be collected during 1980-81 school year because of widespread dissemination of Chapel Hill materials in Kentucky.

Measures -

Changes in the children's performance are measured on two test batteries: the McCarthy Scales of Children's Abilities which is an age normed test and the LAP Diagnostic Edition (LAP-D) composed of developmentally sequenced items. The General Cognitive Index (GCI) in the McCarthy Scales is used as the primary measure of cognitive change. This measure is reliable (.93 for age 5½ years) and well studied for validity.

Child Change Evidence from Kentucky. As shown in Table 2, handicapped children in the Chapel Hill program accomplished cognitive gains significantly greater than children in the kindergarten comparison group. The GCI values are normed to adjust for maturation according to the child's chronological age. A mean of 100 and standard deviation of 16 exists for the norm group. Results of an ANCOVA on the post-test GCI scores with pre-test GCI as covariate produced statistically significant difference between Chapel Hill and comparison group ($F=6.69$, $df=1,111$, $p=.01$). Group means and gains in terms of scaled scores and standard deviation units are summarized in Table 2.

Table 2
Pre/Post Test Means and Standard Deviations on GCI for Chapel Hill (n=93) and Comparison Groups (n=21)

	Pretest		Posttest		Scaled Score Gain	Gains in Test SD Units
	$\bar{X}$	SD	$\bar{X}$	SD		
Chapel Hill	77.3	17.1	84.2	19.0	6.9	.43
Comparison	80.5	14.6	80.9	15.4	.4	.02

The McCarthy data has been normed so that improvement due to maturation has been eliminated. Therefore, the change of 6.9 GCI units for the Chapel Hill group children is a gain close to one-half a standard deviation of the normative sample. This statistical measure represents a cognitive gain that is educationally significant in the classroom.

With the primary program objective of general cognitive growth measured, secondary statistical analyses consisting of correlated t-tests were performed on the pre- and post-test McCarthy subscale scores to measure change in specific skill areas. On the subscales, a mean of 50 and standard deviation of 10 exists for the aged normed group. Table 3 shows significant changes ($p \leq .01$) for the program children on Verbal, Perceptual/Performance, and Motor subscales. The data from the comparison group (Table 4) show significant change only on the Motor subscale.

The LAP-D results add supporting evidence for program effectiveness consistent with McCarthy data. A developmental age is associated with each test item on the LAP-D. Effects of treatment can be separated from maturation by use of a prediction model based on these developmental ages. The ratio of tested age at pretest to chronological age at time of pretest, is used to predict expected gain. The difference between this expected gain and observed gain is a measure of program impact. This prediction model was applied to LAP-D data from the Chapel Hill and kindergarten comparison groups. Some of the children by the time of posttest reached the maximum test developmental level of 72 months, so additional gains could not be accurately measured. For the remaining, the Chapel Hill model children gained an average of 6.13 months beyond what would be expected by maturation alone.

Table 3
Pre and Posttest Comparisons on McCarthy
Subscales for Children in Chapel Hill Model Program
(N=93)

Subscale	Pretest $\bar{X}$	Pretest SD	Posttest $\bar{X}$	Posttest SD	Scaled Score Gain	Gain in Test SD Units	t
Verbal	40.7	11.1	44.9	12.2	4.2	.42	4.83**
Perceptual/ Performance	35.9	8.2	42.2	12.4	6.3	.63	6.54**
Quantitative	36.4	10.2	37.0	9.6	.6	.06	.68
Memory	37.7	11.9	39.4	11.4	1.7	.17	2.06*
Motor	34.8	10.1	41.8	13.0	7.0	.70	6.57**

**$p \leq .01$
*$p \leq .05$

Table 4
Pre and Posttest Comparisons on McCarthy
Subscales for Kindergarten-Aged Children in Comparison Group
(N=21)

Subscale	Pretest $\bar{X}$	Pretest SD	Posttest $\bar{X}$	Posttest SD	Scaled Score Gain	Gain in Test SD Units	t
Verbal	40.1	8.9	41.0	9.4	.9	.09	.75
Perceptual/ Performance	39.3	10.8	41.5	10.7	2.2	.22	1.51
Quantitative	40.2	8.0	40.0	13.2	−.2	−.02	−.06
Memory	38.2	9.6	37.1	8.9	−1.1	−.11	− .65
Motor	39.2	9.3	44.8	12.2	5.6	.56	2.63**

**$p \leq .01$

Model Program Impact. A measure of the educational impact of the program can be seen in the school placements of the children in the year following their participation in a Chapel Hill model classroom. Of the 93 children in the treatment group, all of whom had initially met the state of Kentucky guidelines to receive special education service, only 5% were subsequently placed in special education classrooms, and 6% went on to first grade with some time with a special education teacher. In contrast, 19% of the 21 children in the comparison group were placed in special education classes and another 19% attended first grade with special education support. One can conclude that an impact of the Chapel Hill program is school placement of children in a less restrictive environment.

The impact of the Chapel Hill model on educational services to handicapped children throughout Kentucky is noteworthy. During 1979-80 seven kindergarten classrooms first used the Chapel Hill model. Even though replication and statistical evidence were incomplete by the end of that school year, the Kentucky Department of Education was convinced of its effectiveness and increased its support. Since 1978, the Kentucky Department of Education has committed over $600,000 in incentive grant funds to the replication of the Chapel Hill model. The number of applications by local educational agencies to be replication sites increased from nine the first year to 25 in 1981. Comprehensive care centers, head start programs and a consortium of Northern Kentucky School Districts requested training in use of the model without any special state support.

DISSEMINATION/REPLICATION

Written Materials. Distribution and use of the Chapel Hill materials is so extensive that accurate measurement is difficult. Kaplan, the publisher of 17 copyrighted Chapel Hill Outreach Training publications indicates that during the six month period from April 1980 to October 1980, 1,310 copies of the LAP-D test were sold, 16,030 copies of *A Planning Guide: The Preschool Curriculum* and 1,540 copies of *Working with Families.* Total number of other Chapel Hill publications sold by the publisher in the same period is 31,555. Tens of thousands of items including slide shows, newsletters, recruitment materials in support of early identification and education of the handicapped child are distributed annually by the Chapel Hill project. Translations and adaptations of the LAP-D and curriculum guide serve special groups. Most notable are an Arabic edition in use throughout Egypt and a modified LAP-D for the hearing impaired. A Spanish edition is under development.